



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,314	01/14/2002	Ronald M. Kubacki	02-102	3125

24026 7590 09/11/2003

PHILIP O POST  
25 APPLEBY COURT  
CHERRY HILL, NJ 08002

4  
EXAMINER

BARRECA, NICOLE M

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/045,314

Applicant(s)

KUBACKI, RONALD M.

Examiner

Nicole M. Barreca

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 21-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 21-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

1. Claims 1-5 and 21-30 are pending in this application.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 and 21-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshimura (US 5,512,328).
4. Toshimura discloses a thin film pattern. A seed material is formed on a substrate and then exposed using electron beam lithography in the shape of a pattern. The latent image is then removed and an oriented material is deposited on one of the seed material and the substrate, which have different hydrophilicity (wetting) properties, to form the pattern. Hexamethyldisilazane (HMDS) may be used as the seed material (col.8, 27-col.9, 23).
5. Please note that the pending claims are product-by-process claims. MPEP 2113 teaches that, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." (In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)) "The Patent Office

Art Unit: 1756

bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion." (In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974)) "Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product." (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983)). It is the examiner's position that Yoshimura teaches all product limitations required by the claims, i.e. a selective wetting material comprising a film having silicon and organic components on a substrate, wherein the film comprises one or more selective wetting regions.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5 and 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (US 4,532,150) in view of Weidman (US 4,921,321) and Ogawa (US 5,500,250).

8. Endo discloses an amorphous coating layer of silicon carbide on an electronic substrate. The substrate is subjected to a plasma atmosphere of an organosilane or

Art Unit: 1756

polyorganosilane compounds represented by the general formula  $R_{2n+2}Si_n$ , where R may be a hydrogen atom and  $n=1-4$  (monosilane or disilane when  $n=1$  or  $2$ ). The vapor or gas of the organosilane is mixed with a vapor or gas of a hydrocarbon compound, such as methane, ethane, ethylene or toluene (col.8, 18-44).

Endo does not disclose that the film has one or more selective wetting regions formed from the exposure to radiated electromagnetic energy in the presence of oxygen. Weidman teaches that the irradiation of a silicon containing amorphous film with UV light in the presence of oxygen results in photo oxidation, which results in the formation of materials with reduced solubility and lower refractive index, properties useful for materials used in the fabrication of optical and electronic devices (abstract). Ogawa teaches that a polymer containing Si containing material can be made hydrophilic by oxidation (col.6, 31-35). It would have been obvious to one of ordinary skill in the art to irradiate the silicon containing amorphous film in Endo in the presence of oxygen in order to form selective wetting regions because Weidman teaches that this photo oxidation results in the formation of materials useful in the fabrication of optical and electronic devices with reduced solubility and lower refractive indexes, while Ogawa teaches that this oxidation is known to make the material hydrophilic.

Endo in view of Weidman and Ogawa is silent on the amounts of the silicon and carbon donors and does not disclose that the ratio of the silicon atoms to carbon atoms is approximately 1:7 or that the weight ratio of the organic precursor to the silicon donor is approximately between 1:2 and 1:1. Endo does teach that the addition of the hydrocarbon compound is used to ensure that the deposition of the film has the desired

Art Unit: 1756

Si and C (x) values (col.3, 46-60), thereby establishing that these ratios are result effective variables. It would be within the ordinary skill of one in the art to determine the optimal ratios for the silicon donor and organic precursors by routine experimentation and to have the ratio of the silicon atoms to carbon atoms be approximately 1:7 or to have the weight ratio of the organic precursor to the silicon donor be approximately between 1:2 and 1:1, if required, because Endo teaches that these ratios are result effective variables and the discovery of an optimum value of a result effective variable is ordinary within the skill of the art, as taught by *In re Boesch* (617 F.2d 272, 205 USPQ 215 (CCPA 1980)).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Adams (US 4,752,590) discloses a cap material is formed by CVD in an atmosphere comprising an appropriate precursor such as  $\text{SiH}_4$  and  $\text{O}_2$ , with the addition of an effective amount of a wetting agent containing molecular species such as  $\text{CH}_4$ ,  $\text{C}_2\text{H}_2$  or  $\text{C}_2\text{H}_6$ .

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole M. Barreca whose telephone number is 703-308-7968. The examiner can normally be reached on Monday-Thursday (8:00 am-6: 30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

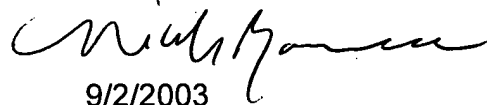
Application/Control Number: 10/045,314

Page 6

Art Unit: 1756

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Nicole Barreca  
Patent Examiner  
Art Unit 1756



9/2/2003